

**VT52 COMPATIBLE MODE**

Modes	Sequence
Enter ANSI mode	ESC <
Keypad Character Selection	

Name	Sequence
Enter alternate keypad mode	ESC =
Exit alternate keypad mode (Numeric keypad mode)	ESC >

*NOTE: VT52 alternate keypad and numeric keypad mode different than ANSI.*

**Character Sets**

Name	Sequence
Special graphics character set	ESC F*
Select US/UK character set (as determined by the US/UK character SET-UP feature)	ESC G

**Cursor Position**

Name	Sequence
Cursor up†	ESC A
Cursor down†	ESC B
Cursor right†	ESC C
Cursor left†	ESC D
Cursor to home	ESC H
Direct cursor address	ESC Y Pl Pc‡
Reverse line feed	ESC I §

\* Same as special character and line drawing set in ANSI mode.

† Same when sent from the terminal.

‡ Line and column numbers for direct cursor address are single character codes whose values are the desired number plus (37<sub>8</sub>). Line and column numbers start at one.

§ The last character of the sequence is an uppercase i (111<sub>8</sub>).

**Erasing**

Name	Sequence
Erase to end of line	ESC K
Erase to end of screen	ESC J

**Print Commands**

Name	Sequence
Enter auto print mode	ESC ^
Exit auto print mode	ESC -
Enter printer controller mode	ESC W
Exit printer controller mode	ESC X
Print screen	ESC ]
Print cursor line	ESC V

**Reports**

Name	Sequence
Identify (what are you)	ESC Z
Response: VT102	ESC / Z

**digital****VT102 PROGRAMMING  
REFERENCE CARD****CONTROL CHARACTERS RECEIVED**

Name	Character Mnemonic	Octal Code	Function
Null	NUL	000	This character is ignored when received (not stored in input buffer) and used as a fill character.
End Of Text	ETX	003	This character can be selected as a half-duplex turnaround character.
End Of Transmission	EOT	004	This character can be selected as a disconnect character or as a half-duplex turnaround character. When used as a turnaround character, the disconnect character is DLE-EOT.
Enquire	ENQ	005	This character transmits the answerback message.
Bell	BEL	007	This character generates a bell tone.
Backspace	BS	010	This character moves the cursor to the left one character position, unless it is at the left margin, in which case no action occurs.
Horizontal Tab	HT	011	This character moves the cursor to the next tab stop, or to the right margin if there are no more tab stops.

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Tab Stops			Print Commands			Tests and Adjustments			VT52 COMPATIBLE MODE			Print Commands								
Name	Mnemonic	Sequence	Name	Mnemonic	Sequence	Name	Mnemonic	Sequence	Modes	Sequence	Name	Sequence	Name	Sequence						
Horizontal tab set (at current column)	HTS	ESC H	Media copy (enter auto print)	MC	ESC [ ? 5 i	Screen alignment display (fill screen with "Es")	DECALN	ESC # 8	Enter ANSI mode	ESC <	Enter auto print mode	ESC <	Enter auto print mode	ESC <						
Tabulation clear (at current column)	TBC	ESC [ g	Media copy (exit auto print)	MC	ESC [ ? 4 i	Invoke confidence test (power-up test)	DECTST	ESC [ 2 ; 1 y	Keypad Character Selection	ESC >	Enter printer control	ESC >	Exit printer control	ESC >						
Tabulation clear (at current column)	TBC	ESC [ 0 g	Media copy (enter printer controller)	MC	ESC [ 5 i	Invoke confidence test (data loop back test, requires test connector)	DECTST	ESC [ 2 ; 2 y	Name	Sequence	Print screen	Sequence	Print cursor line	Sequence						
Tabulation clear (all tabs)	TBC	ESC [ 3 g	Media copy (print screen)	MC	ESC [ i	Invoke confidence test (EIA modem control test, requires test connector)	DECTST	ESC [ 2 ; 4 y	Enter alternate keypad mode	ESC =	Reports	Reports	Exit alternate keypad mode (Numeric keypad mode)	ESC >						
Line Attributes			Media copy (print screen)	MC	ESC [ 0 i	Invoke confidence test (repeat power-up test continuously until failure or power-off)	DECTST	ESC [ 2 ; 9 y	Name	Sequence	Name	Sequence	Name	Sequence						
Double-height top half			Media copy (print cursor line)	MC	ESC [ ? 1 i	Invoke confidence test (repeat data loopback test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 10 y	NOTE: VT52 alternate keypad and numeric keypad mode different than ANSI.	Identify (what are you)			Response: VT102							
Double-height bottom half	DECIDLH	ESC # 3	Reports			Invoke confidence test (repeat EIA test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 12 y	Character Sets	Character Sets			Special graphics character set							
Single-width single-height	DECIDLH	ESC # 4	Name	Mnemonic	Sequence	Invoke confidence test (repeat printer port data loopback test, requires test connector)	DECTST	ESC [ 2 ; 16 y	Name	Select US/UK character set (as determined by the US/UK character SET-UP feature)			ESC F*	ESC G	ESC F*					
Double-width single-height	DECIDLW	ESC # 5	Device status report (request status of VT102)	DSR	ESC [ 5 n	Invoke confidence test (repeat printer port data loopback test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 24 y	Cursor Position	Cursor Position			ESC G	ESC H	ESC A					
Erasing			Response:	Terminal OK			DECTST	ESC [ 2 ; 24 y	Name	Name			Cursor down†	ESC B	ESC C					
Name			Terminal not OK	DSR	ESC [ 0 n	Invoke confidence test (repeat EIA test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 12 y	DECTST	Special graphics character set			Cursor right†	ESC D	ESC E					
Erase in line (cursor to end of line)	EL	ESC [ K	Device status report (request status of printer)	DSR	ESC [ ? 15 n	Invoke confidence test (repeat printer port data loopback test, requires test connector)	DECTST	ESC [ 2 ; 16 y	DECTST	Select US/UK character set (as determined by the US/UK character SET-UP feature)			Cursor left†	ESC F	ESC G					
Erase in line (cursor to end of line)	EL	ESC [ 0 K	Response:	Printer ready			DECTST	ESC [ 2 ; 24 y	DECTST	Cursor to home			Cursor to home	ESC H	ESC I					
Erase in line (beginning of line to cursor)	EL	ESC [ 1 K	Printer not ready	DSR	ESC [ ? 10 n	Invoke confidence test (repeat EIA test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 24 y	DECTST	Direct cursor address			Direct cursor address	ESC Y	PI Pc‡					
Erase in line (entire line containing cursor)	EL	ESC [ 2 K	No printer	DSR	ESC [ ? 11 n	Invoke confidence test (repeat printer port data loopback test, requires test connector)	DECTST	ESC [ 2 ; 24 y	DECTST	Reverse line feed			Reverse line feed	ESC I	§					
Erase in display (cursor to end of screen)	ED	ESC [ J	Device status report (report cursor position)	DSR	ESC [ 6 n	Invoke confidence test (repeat printer port data loopback test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 24 y	DECTST	* Same as special character and line drawing set in ANSI mode.			* Same as special character and line drawing set in ANSI mode.							
Erase in display (cursor to end of screen)	ED	ESC [ 0 J	Cursor position report	CPR	ESC [ P1; Pc R	Invoke confidence test (repeat printer port data loopback test, requires test connector)	DECTST	ESC [ 2 ; 24 y	DECTST	† Same when sent from the terminal.			† Same when sent from the terminal.							
Erase in display (beginning of screen to cursor)	ED	ESC [ 1 J	Device attributes (what are you)	DA	ESC [ c	Invoke confidence test (repeat printer port data loopback test continuously until failure or power-off, requires test connector)	DECTST	ESC [ 2 ; 24 y	DECTST	‡ Line and column numbers for direct cursor address are single character codes whose values are the desired number plus (37 <sub>8</sub> ).			‡ Line and column numbers start at one.							
Erase in display (entire screen)	ED	ESC [ 2 J	Device attributes (what are you)	DA	ESC [ 0 c	DA	ESC Z	DA	ESC [ 1 q	DA	ESC Z	DA	ESC I	§	The last character of the sequence is an uppercase i (111 <sub>8</sub> ).					
Editing Functions			Identify Terminal (what are you)	DECID	ESC Z	NOTE: ESC Z is not recommended.			Erasing			Editing Functions			Copyright © 1998					
Name			Device Attributes Response: VT102			Keyboard LEDs			Name			Name			Copyright © 1998					
Delete character	DCH	ESC [ Pn P	DA	ESC [ ? 6 c	Keyboard LEDs			Load LEDs (L1 off)	DECLL	ESC [ q	Load LEDs (L1 off)	DECLL	ESC [ 0 q	Load LEDs (L1 on)	DECLL	ESC [ 1 q	Copyright © 1998			
Insert line	IL	ESC [ Pn L	Reset			Name			Load LEDs (L1 off)	DECLL	ESC [ 0 q	Load LEDs (L1 off)	DECLL	ESC [ 1 q	Load LEDs (L1 on)	DECLL	ESC [ 2 q	Copyright © 1998		
Delete line	DL	ESC [ Pn M	Name			Mnemonic			Load LEDs (L1 on)	DECLL	ESC [ 1 q	Load LEDs (L1 on)	DECLL	ESC [ 2 q	Load LEDs (L1 off)	DECLL	ESC [ 3 q	Copyright © 1998		
Reset to initial state			RIS			Sequence			Name			Name			Name			Copyright © 1998		

Name	Character Mnemonic	Octal Code	Function	Name	Character Mnemonic	Octal Code	Function
Line Feed	LF	012	This character causes a line feed or a new line operation. (refer to Linefeed/New Line mode.)	Cancel	CAN	030	If received during an escape or control sequence, the sequence is cancelled and substitution character (W) is displayed.
Vertical Tab	VT	013	This character is processed as LF.	Substitute	SUB	032	This character is processed as CAN.
Form Feed	FF	014	This character is processed as LF. It can also be selected as a half-duplex turnaround character.	Escape	ESC	033	This character is processed as a sequence introducer.
Carriage Return	CR	015	This character moves the cursor to left margin on the current line. It can also be selected as a half-duplex turnaround character.	Delete	DEL	177	This character is ignored when received (not stored in input buffer).
<b>ANSI COMPATIBLE SEQUENCES</b>							
<b>Set Mode</b>							
Shift Out	SO	016	This character selects the G1 character set, as designated by a Select Character Set sequence.	Name	Mnemonic	Mode	Sequence
Shift In	SI	017	This character selects the G0 character set, as designated by a Select Character Set sequence.	Keyboard action	KAM	Locked	ESC [ 2 h
Device Control 1	DC1	021	This character is processed as XON. It causes the terminal to continue transmitting characters.	Insertion-replacement	IRM	Insert	ESC [ 4 h
Device Control 3	DC3	023	This character is processed as XOFF. It causes terminal to stop transmitting all characters except XOFF and XON. It can also be selected as a half-duplex turnaround character.	Send-receive	SRM	Off	ESC [ 1 2 h
				Line feed/new line	LMN	New line	ESC [ 2 0 h
				Cursor key	DECCKM	Application	ESC [ ? 1 h
				ANSI/VT52	DECANM	ANSI	N/A
				Column	DECOLM	132 column	ESC [ ? 3 h
				Scrolling	DECSCLM	Smooth	ESC [ ? 4 h
				Screen	DECSCNM	Reverse	ESC [ ? 5 h
				Origin	DECOM	Relative	ESC [ ? 6 h
				Auto wrap	DECAWM	On	ESC [ ? 7 h
				Auto repeat	DECARM	On	ESC [ ? 8 h
				Print form feed	DECFF	On	ESC [ ? 1 8 h
				Print extent	DECPEX	Full Screen	ESC [ ? 1 9 h

Name	Mnemonic	Mode	Sequence
Keyboard action	KAM	Unlocked	ESC [ 2 I*
Insertion-replacement	IRM	Replace	ESC [ 4 I*
Send-receive	SRM	On	ESC [ 1 2 I*
Line feed/new line	LMN	Line feed	ESC [ 2 0 I*
Cursor key	DECCKM	Cursor	ESC [ ? 1 I*
ANSI/VT52	DECANM	VT52	ESC [ ? 2 I*
Column	DECCOLM	80 column	ESC [ ? 3 I*
Scrolling	DECSCLM	Jump	ESC [ ? 4 I*
Screen	DECSCNM	Normal	ESC [ ? 5 I*
Origin	DECOM	Absolute	ESC [ ? 6 I*
Auto wrap	DECACWM	Off	ESC [ ? 7 I*
Auto repeat	DECARM	Off	ESC [ ? 8 I*
Print form feed	DECPFF	Off	ESC [ ? 1 8 I*
Print extent	DECPEX	Scrolling	ESC [ ? 1 9 I*

\* The last character of the sequence is lowercase L (154<sub>8</sub>)

## Cursor Key Codes Generated

	ANSI Characters Generated	
Cursor Key (Arrow)	Reset (Cursor)	Set (Application)
Up	ESC [ A	ESC O A
Down	ESC [ B	ESC O B
Right	ESC [ C	ESC O C
Left	ESC [ D	ESC O D

## Keypad Codes Generated

	VISZ Keypad Mode	VISZ Keypad Mode	ANSI Keypad Mode	ANSI Keypad Mode
0	0	ESC ? p	0	ESC O p
1	1	ESC ? q	1	ESC O q
2	2	ESC ? r	2	ESC O r
3	3	ESC ? s	3	ESC O s
4	4	ESC ? t	4	ESC O t
5	5	ESC ? u	5	ESC O u
6	6	ESC ? v	6	ESC O v
7	7	ESC ? w	7	ESC O w
8	8	ESC ? x	8	ESC O x
9	9	ESC ? y	9	ESC O y
- (minus)	- (minus)	ESC ? m	- (minus)	ESC O m
(comma)	, (comma)	ESC ? l*	, (comma)	ESC O l*
(period)	. (period)	ESC ? n	. (period)	ESC O n
ENTER	Same as	ESC ? M	Same as	ESC O M
RETURN			RETURN	
PF1	ESC P	ESC P	ESC O P	ESC O P
PF2	ESC Q	ESC Q	ESC O Q	ESC O Q
PF3	ESC R	ESC R	ESC O R	ESC O R
PF4	ESC S	ESC S	ESC O S	ESC O S

The last character of the sequence is lowercase L (154<sub>9</sub>)

#### Select Character Sets SCS

Character Set	G0 Designator	G1 Designator
Name	Mnemonic	Sequence
United Kingdom (UK)	ESC ( A	ESC ) A
United States (USASCII)	ESC ( B	ESC ) B
special characters	ESC ( O	ESC ) O
and line drawing set		
Alternate character ROM	ESC ( 1	ESC ) 1
Alternate character ROM –	ESC ( 2	ESC ) 2
special characters		
Single Shift 2	SS2	ESC N
Single Shift 3	SS3	ESC O



## Keypad Codes Generated

Sequence		VT52 Numeric Keypad Mode	VT52 Alternate Keypad Mode	ANSI Numeric Keypad Mode	ANSI Alternate Keypad Mode
ESC [ 2 l*					
ESC [ 4 l*					
ESC [ 1 2 l*					
ESC [ 2 0 l*	0	0 ESC ? p	0	0 ESC O p	
ESC [ ? 1 l*	1	1 ESC ? q	1	1 ESC O q	
ESC [ ? 2 l*	2	2 ESC ? r	2	2 ESC O r	
ESC [ ? 3 l*	3	3 ESC ? s	3	3 ESC O s	
ESC [ ? 4 l*	4	4 ESC ? t	4	4 ESC O t	
ESC [ ? 5 l*	5	5 ESC ? u	5	5 ESC O u	
ESC [ ? 6 l*	6	6 ESC ? v	6	6 ESC O v	
ESC [ ? 7 l*	7	7 ESC ? w	7	7 ESC O w	
ESC [ ? 8 l*	8	8 ESC ? x	8	8 ESC O x	
ESC [ ? 1 8 l*	9	9 ESC ? y	9	9 ESC O y	
ESC [ ? 1 9 l*	- (minus)	- (minus) ESC ? m	- (minus)	- (minus) ESC O m	
	,	, (comma) , (comma) ESC ? l*	,	, (comma) ESC O l*	
	.	. (period) . (period) ESC ? n	.	. (period) ESC O n	
ENTER	Same as	ESC ? M	Same as	ESC O M	
RETURN	Same as	RETURN	Same as	RETURN	
PF1	ESC P	ESC P	ESC O P	ESC O P	
PF2	ESC Q	ESC Q	ESC O Q	ESC O Q	
PF3	ESC R	ESC R	ESC O R	ESC O R	
PF4	ESC S	ESC S	ESC O S	ESC O S	

\* The last character of the sequence is lowercase L (154<sub>16</sub>)

## Select Character Sets SCS

Character Set	G0 Designator	G1 Designator
United Kingdom (UK)	ESC ( A	ESC ) A
United States (USASCII)	ESC ( B	ESC ) B
Special characters and line drawing set	ESC ( O	ESC ) O
Alternate character ROM	ESC ( 1	ESC ) 1
Alternate character ROM -	ESC ( 2	ESC ) 2
Special characters		
Name	Mnemonic	Sequence
Single Shift 2	SS2	ESC N
Single Shift 3	SS3	ESC O

## US/UK Character Set

B7 BITS	B6 COLUMN 0	B5 ROW 1	B4 COLUMN 2	B3 ROW 2	B2 COLUMN 3	B1 ROW 3	B0 COLUMN 4	SP	0	60	@	100	P	120	'	140	P	160
0 0 0 0 0 0	NUL	0	20	32	40	48	56	60	64	68	72	76	80	96	112	120	132	150
0 0 0 0 1 1	DC1	21	!	31	1	61	A	101	Q	121	a	141	q	161	!	181	191	211
0 0 0 1 0 2	DC2	22	"	32	2	62	B	102	R	122	b	142	r	162	"	182	192	212
0 0 0 1 1 3	DC3	23	* # £	33	3	63	C	103	S	123	c	143	s	163	*	183	193	213
0 0 1 0 0 4		4	\$	34	4	64	D	104	T	124	d	144	t	164	\$	184	194	214
0 0 1 0 1 5	ENQ	24	% ^ &	35	5	65	E	105	U	125	e	145	u	165	%	185	195	215
0 0 1 0 6		6	&	36	6	66	F	106	V	126	f	146	v	166	&	186	196	216
0 0 1 1 1 7	BEL	27	*	37	7	67	G	107	W	127	g	147	w	167	*	187	197	217
1 0 0 0 0 8	BS	10	CAN	28	(	68	H	108	X	128	h	148	x	168	(	188	198	218
1 0 0 0 1 9	HT	11	0	29	)	69	I	109	Y	129	i	149	y	169	)	189	199	219
1 0 1 0 0 10	LF	12	SUB	30	:	70	J	110	Z	130	j	150	z	170	:	190	210	230
1 0 1 1 1 11	VT	13	ESC	31	#	71	K	111	[	131	k	151	[	171	#	191	211	231
1 1 0 0 0 12	FF	14		32	;	72	L	112	\	132	l	152	\	172		192	212	232
1 1 0 0 1 13	CR	15		33	=	73	M	113	{	133	m	153	{	173		193	213	233
1 1 1 0 0 14	SO	16		34	<	74	N	114	^	134	n	154	^	174		194	214	234
1 1 1 1 0 15	SI	17		35	/	75	O	115	~	135	o	155	~	175		195	215	235

## Special Characters and Line Drawing Set

B7 BITS	B6 COLUMN 0	B5 ROW 1	B4 COLUMN 2	B3 ROW 2	B2 COLUMN 3	B1 ROW 3	B0 COLUMN 4	SP	0	60	@	100	P	120	'	140	P	160
0 0 0 0 0 0	NUL	0	20	32	40	48	56	60	64	68	72	76	80	96	112	120	132	150
0 0 0 0 1 1	DC1	21	!	33	1	61	A	101	Q	121	a	141	q	161	!	181	191	211
0 0 0 1 0 2	DC2	22	"	34	2	62	B	102	R	122	b	142	r	162	"	182	192	212
0 0 0 1 1 3	DC3	23	* # £	35	3	63	C	103	S	123	c	143	s	163	*	183	193	213
0 0 1 0 0 4		4	\$	36	4	64	D	104	T	124	d	144	t	164	\$	184	194	214
0 0 1 0 1 5	ENQ	24	% ^ &	37	5	65	E	105	U	125	e	145	u	165	%	185	195	215
0 0 1 0 6		6	&	38	6	66	F	106	V	126	f	146	v	166	&	186	196	216
0 0 1 1 1 7	BEL	27	*	39	7	67	G	107	W	127	g	147	w	167	*	187	197	217
1 0 0 0 0 8	BS	10	CAN	40	(	68	H	108	X	128	h	148	x	168	(	188	198	218
1 0 0 0 1 9	HT	11	0	41	)	69	I	109	Y	129	i	149	y	169	)	189	199	219
1 0 1 0 0 10	LF	12	SUB	42	:	70	J	110	Z	130	j	150	z	170	:	190	210	230
1 0 1 1 1 11	VT	13	ESC	43	#	71	K	111	[	131	k	151	[	171	#	191	211	231
1 1 0 0 0 12	FF	14		44	<	72	L	112	\	132	l	152	\	172		192	212	232
1 1 0 0 1 13	CR	15		45	=	73	M	113	{	133	m	153	{	173		193	213	233
1 1 1 0 0 14	SO	16		46	>	74	N	114	^	134	n	154	^	174		194	214	234
1 1 1 1 0 15	SI	17		47	?	75	O	115	~	135	o	155	~	175		195	215	235